

Exemption No. 5623B

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056**

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| In the matter of the petition of | |
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| Saab Aircraft AB | Regulatory Docket No. 27155 |
| for an exemption from §§ 25.562(b)(2) | |
| and 25.562(c)(5) of the Federal | |
| Aviation Regulations | |
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PARTIAL GRANT OF EXEMPTION

By letter RN 150037 dated December 21, 1993, Mr. Arne Axelsson, Vice President, Quality and Airworthiness, Saab Aircraft AB, S-581 88 Linköping, Sweden, petitioned for an extension to Exemption 5623A regarding Head Injury Criterion (HIC) of § 25.562(c)(5) and the floor distortion requirement of § 25.562(b)(2) of the Federal Aviation Regulations (FAR). The existing exemption expires on June 30, 1994, or upon delivery of a US certificate of airworthiness, whichever comes first.

Sections of the FAR affected:

Section 25.562(c)(5), as amended by Amendment 25-64, requires that each occupant must be protected from serious head injury under the conditions prescribed in paragraph (b) of this section. Where head contact with seats or other structure can occur, protection must be provided so that the head impact does not exceed a HIC of 1,000 units. The level of HIC is defined by the equation:

$$HIC = \left[(t_2 - t_1) \left[\frac{1}{(t_2 - t_1)} \int_{t_1}^{t_2} a(t) dt \right]^{2.5} \right]_{\max}$$

Related Section of the FAR:

Section 25.785(a), as amended by Amendment 25-64, requires that each seat, berth, safety belt, harness, and adjacent part of the airplane at each station designated as occupiable during takeoff and landing must be designed so that a person making proper use of those facilities will not suffer serious injury in an emergency landing as a result of inertia forces specified in §§ 25.561 and 25.562. (Due to a non-substantive editorial change, these requirements are contained in § 25.785(a) and (b) of current Part 25.)

The petitioner's supportive information is as follows:

Since the issuance of Exemption 5623A, Saab has continued to conduct tests and try to develop the necessary design solutions. With respect to the interior furnishings this has been to qualify padding to the surface of the wardrobe. Early successes in developmental testing were not borne out in full-scale tests. Therefore, Saab is still not confident that a production solution will be available by June 30, 1994, and therefore requests an extension until December 31, 1994. Saab is also pursuing alternate means of providing head injury protection, that may provide more predictable performance. In addition, deliveries to US customers will not occur until approximately late 1994.

The petitioner stated that the redesigned flight-deck seats have passed the floor warpage test and that no extension is needed for compliance with § 25.562(b)(2).

The FAA finds, for good cause, that action on this petition should not be delayed by publication and comment procedures for the following reasons: (1) the grant of this petition would not set a precedent in this matter in that it only involves an extension of the compliance time of an existing exemption; (2) a summary of the June 17, 1993, Saab Aircraft AB petition for extension was published in the Federal Register on July 8, 1993 (58 FR 6428). There were no comments.

The FAA's analysis/summary is as follows:

The FAA originally issued Exemption 5623 based on the lack of commercial availability of design solutions for compliance with the HIC requirement, and the applicant's confusion regarding the applicability of the floor distortion requirement to the Saab airplane. In issuing the exemption, the FAA established a date that would have allowed type certification of the airplane, but would have expired before the first such airplane was delivered to a US operator. Since the certification date has now been delayed until spring of 1994 and deliveries to US customers will not occur until late 1994, an extension of the exemption will not adversely affect safety, provided the same philosophy is employed.

The FAA notes that Saab has been making a good faith effort to comply with the regulation, as noted in their progress reports submitted in accordance with Exemption 5623. While it appears that the compliance problems will be solved, the FAA agrees that this may not occur in time for type certification. However, given that the first deliveries

to US customers are not scheduled until well after that date, the impact on safety will be negligible.

The FAA has carefully considered the information provided by the petitioner, and has determined that there is sufficient merit to extend the compliance date of Exemption 5623A.

In consideration of the foregoing, I find that a grant of exemption is in the public interest, and will not significantly affect the level of safety provided by the regulations. Therefore, pursuant to the authority contained in §§ 313(a) and 601(c) of the Federal Aviation Act of 1958, delegated to me by the Administrator (14 CFR 11.53), the petition of Saab Aircraft AB for exemption from the HIC requirements of § 25.562(c)(5) of the FAR, for front row seats on SAAB 2000 airplanes, is granted until December 31, 1994. Other provisions of Exemption 5623, together with its conditions and limitations, remain the same and are applicable to this exemption. This amendment is part of, and shall remain attached to, Exemption 5623.

Issued in Renton, Washington, on

Acting Manager,
Transport Airplane Directorate
Aircraft Certification Service

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